



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/661,273

09/11/2003

Vijayeshwar D. Khanna

HSJ920030120US1

7607

7590

12/14/2005

John L. Rogitz  
Rogitz & Associates  
Suite 3120  
750 B Street  
San Diego, CA 92101

EXAMINER

RENNER, CRAIG A

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/661,273  
Filing Date: September 11, 2003  
Appellant(s): KHANNA ET AL.

**MAILED**

**DEC 14 2005**

**Technology Center 2600**

---

John L. Rogitz  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 05 October 2005 appealing from the Office action mailed 20 September 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect. The amendments after final rejection filed on 28 September 2005 and 05 October 2005 have not been entered.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

In section (b), claim 23 has been withdrawn from consideration and therefore has not been rejected under 35 U.S.C. §102 as being anticipated by Kuroda, JP-03168985.

**(7) Claims Appendix**

A substantially correct copy of appealed claims 1 and 3-23 appears on pages 9-11 of the Appendix to the appellant's brief. The minor errors are as follows:

- a. Claim 1, line 14, "not substantially disrupted" should be --not disrupted--.
- b. Claims 8, 16 and 23 are withdrawn from consideration and therefore are not appealed claims.

**(8) Evidence Relied Upon**

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2652

2. Claims 1, 3-7 and 17-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In lines 13-14 of claim 1, "an air bearing between the slider and disk is not disrupted" is indefinite because it is misdescriptive of the disclosure, which details that an air bearing between the slider and disk is not substantially disrupted (emphasis added). See lines 3-4 of the ABSTRACT and lines 6-7 and 18 on page 3, for instance.

b. In lines 7-8 of claim 17, "an air bearing surface is not disrupted by the movement of the data transfer element" is indefinite because it is misdescriptive of the disclosure, which details that an air bearing is not substantially disrupted by the movement of the data transfer element (emphasis added). See lines 3-4 of the ABSTRACT and lines 6-7 and 18 on page 3, for instance.

c. Claims 3-7 and 18-22 inherit the indefiniteness associated with their respective base claims and stand rejected as well.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2652

4. Claims 1, 3, 6-7, 9-11, 14-15, 17-19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuroda (JP.03-168985).

With respect to claims 1, 3 and 6-7, Kuroda teaches a hard disk drive comprising a base (6); a cover (7) covering the base; at least one rotatable data storage disk (5) supported on the base; at least one actuator (includes 12, for instance) movably mounted within the base; at least one assembly (includes 2 and 4, for instance) supported by the actuator, the assembly including a slider (4) supported by a suspension (2); and at least one motion limiting element (includes each 13, for instance) positioned to block shock-induced motion of the assembly when the slider is operating in at least an active region of the disk (as shown in FIGS. 1-2, for instance), the motion limiting element being spaced from the suspension such that motion of the suspension away from the disk in the event of a shock when the slider is operating in the region is constrained by the motion limiting element (as shown in FIG. 1, for instance), wherein a distance between the motion limiting element and the assembly is established (as shown in FIG. 1, for instance) to constrain movement of the suspension away from the disk (as shown in FIG. 1, for instance) such that an air bearing between the slider and disk is not disrupted (as shown in FIG. 1, for instance, in so far as this limitation is definite and understood as detailed in paragraph 2a, supra) [as per claim 1]; wherein both the cover and the base are formed with respective motion limiting elements (as shown in FIG. 1, for instance) [as per claim 3]; wherein the disk defines a data storage area and the motion limiting element is arcuate shaped across substantially the entire data storage area of the disk (as shown in FIG. 2, for instance, i.e., in as broad as the

Art Unit: 2652

term "substantially" may be construed) [as per claim 6]; and wherein the disk defines a data storage area and the motion limiting element extends only across a portion of the radius of the data storage area of the disk (as shown in FIG. 2, for instance) [as per claim 7].

With respect to claims 9-11 and 14-15, Kuroda teaches a hard disk drive having a motion limiting element (any 13) mechanically constraining movement of at least one suspension (2) of the disk drive away from a disk (5) of the disk drive in the event of a mechanical shock to the disk drive while operating at least in a protected region of the disk such that an air bearing between a slider supported by the suspension and the disk is not substantially disrupted (as shown in FIG. 1, for instance) [as per claim 9]; wherein the hard disk drive further comprises a base (6); a cover (5) covering the base; and at least one actuator (includes 12, for instance) movably mounted within the base, the suspension being mounted on an end of the actuator (as shown in FIG. 2, for instance) [as per claim 10]; wherein both the cover and the base are formed with respective motion limiting elements (each 13, as shown in FIG. 1, for instance) [as per claim 11]; wherein the disk defines a data storage area and the motion limiting element is arcuate shaped across substantially the entire data storage area of the disk (as shown in FIG. 2, for instance, i.e., in as broad as the term "substantially" may be construed) [as per claim 14]; and wherein the disk defines a data storage area and the motion limiting element extends only across a portion of the data storage area of the disk (as shown in FIG. 1, for instance) [as per claim 15].

With respect to claims 17-19 and 22, Kuroda teaches a data storage device comprising at least one data storage medium (5); at least one data transfer element (4) juxtaposed with the medium for transferring data therebetween; and means (includes 13, for instance, in at least an equivalent structural sense) for mechanically constraining movement of the data transfer element away from the data storage medium in the event of a mechanical shock to the device while operating in a protected region of the medium (as shown in FIG. 1, for instance) such that an air bearing surface is not disrupted by the movement of the data transfer element (as shown in FIG. 1, for instance, in so far as this limitation is definite and understood as detailed in paragraph 2b, supra) [as per claim 17]; wherein the data storage device further comprises a base (6); a cover (7) covering the base; and at least one actuator (includes 12, for instance) movably mounted within the base, the data transfer element being mounted on an end of the actuator (as shown in FIG. 2, for instance) [as per claim 18]; wherein both the cover and the base are formed with respective means for mechanically constraining (includes each 13, for instance, in at least an equivalent structural sense, as shown in FIG. 1, for instance) [as per claim 19]; and wherein the means for mechanically constraining is arcuate shaped across a radial portion of the data storage medium (as shown in FIG. 2, for instance) [as per claim 22].

5. Claims 1, 3-5, 7, 9-13, 15 and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Onda (US 6,417,991).



With respect to claims 1, 3-5 and 7, Onda teaches a hard disk drive comprising a base (11); a cover (23) covering the base; at least one rotatable data storage disk (13) supported on the base; at least one actuator (includes 16 and 17, for instance) movably mounted within the base; at least one assembly (includes 21a and 22a, for instance) supported by the actuator, the assembly including a slider (22a or 22d) supported by a suspension (21a or 21d); and at least one motion limiting element (includes 33 and/or includes 38, for instance) positioned to block shock-induced motion of the assembly when the slider is operating in at least an active region of the disk (as shown in FIG. 3, for instance), the motion limiting element being spaced from the suspension such that motion of the suspension away from the disk in the event of a shock when the slider is operating in the region is constrained by the motion limiting element (as shown in FIG. 3, for instance), wherein a distance between the motion limiting element and the assembly is established (s shown in FIG. 3, for instance) to constrain movement of the suspension away from the disk (as shown in FIG. 3, for instance) such that an air bearing between the slider and disk is not disrupted (as shown in FIG. 3, for instance, in so far as this limitation is definite and understood as detailed in paragraph 2a, supra) [as per claim 1]; wherein both the cover and the base are formed with respective motion limiting elements (includes 38 and includes 33, respectively) [as per claim 3]; wherein the motion limiting element is established at least in part by an indent (38) in the cover depending down from a plane defined by the cover (as shown in FIG. 3, for instance) [as per claim 4]; wherein the motion limiting element is established at least in part by a rib (33) in the base rising up from a plane defined by the base (as shown in FIG. 3, for

Art Unit: 2652

instance) [as per claim 5]; and wherein the disk defines a data storage area and the motion limiting element extends only across a portion of the radius of the data storage area of the disk (as shown in FIG. 3, for instance) [as per claim 7].

With respect to claims 9-13 and 15, Onda teaches a hard disk drive having a motion limiting element (includes 33 or includes 38, for instance) mechanically constraining movement of at least one suspension (includes 21a or includes 21d, for instance) of the disk drive away from a disk (13) of the disk drive in the event of a mechanical shock to the disk drive while operating at least in a protected region of the disk such that an air bearing between a slider supported by the suspension and the disk is not substantially disrupted (as shown in FIG. 3, for instance) [as per claim 9]; wherein the hard disk drive further comprises a base (11); a cover (23) covering the base; and at least one actuator (includes 16 and 17, for instance) movably mounted within the base, the suspension being mounted on an end of the actuator (as shown in FIG. 3, for instance) [as per claim 10]; wherein both the cover and the base are formed with respective motion limiting elements (includes 38 and includes 33, respectively) [as per claim 11]; wherein the motion limiting element is established at least in part by an indent (38) in the cover depending down from a plane defined by the cover (as shown in FIG. 3, for instance) [as per claim 12]; wherein the motion limiting element is established at least in part by a rib (33) in the base rising up from a plane defined by the base (as shown in FIG. 3, for instance) [as per claim 13]; and wherein the disk defines a data storage area and the motion limiting element extends only across a portion of the data storage area of the disk (as shown in FIG. 3, for instance) [as per claim 15].

With respect to claims 17-21, Onda teaches a data storage device comprising at least one data storage medium (13); at least one data transfer element (includes 22a and/or includes 22d, for instance) juxtaposed with the medium for transferring data therebetween; and means (includes 33 and/or includes 38, for instance, in at least an equivalent structural sense) for mechanically constraining movement of data transfer element away from the data storage medium in the event of a mechanical shock to the device while operating in a protected region of the medium (as shown in FIG. 3, for instance) such that an air bearing surface is not disrupted by the movement of the data transfer element (as shown in FIG. 3, for instance, in so far as this limitation is definite and understood as detailed in paragraph 2b, supra) [as per claim 17]; wherein the data storage device further comprises a base (11); a cover (23) covering the base; and at least one actuator (includes 16 and 17, for instance) movably mounted within the base, the data transfer element being mounted on an end of the actuator (as shown in FIG. 3, for instance) [as per claim 18]; wherein both the cover and the base are formed with respective means (includes 38 and includes 33, respectively, for instance, in at least an equivalent structural sense) for mechanically constraining [as per claim 19]; wherein the means for mechanically constraining is established at least in part by an indent (38) in the cover depending down from a plane defined by the cover (as shown in FIG. 3, for instance) [as per claim 20]; and wherein the means for mechanically constraining is established at least in part by a rib (33) in the base rising up from a plane defined by the base (as shown in FIG. 3, for instance) [as per claim 21].

**(10) Response to Argument**

Rejection under 35 USC 102(b) using Onda (US 6,417,991)

With regard to this rejection, it is noted that appellant does not refute that the hard disc drive of Onda includes all of the claimed structural elements. Appellant's sole argument lies in the last functional limitation in each of the independent claims. As an initial matter, it is noted that "where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristics relied on," *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (CCPA 1971) and also that the burden of proof can be shifted to the applicant to show that the subject matter of the prior art does not possess the characteristic relied on whether the rejection is based on inherency under 35 U.S.C. 102 or obviousness under 35 U.S.C. 103, *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

The examiner's first step is to analyze this functional limitation to completely understand what is actually being claimed. The functional limitation appearing in independent claim 1, for instance, is as follows: "wherein a distance between the motion limiting element is established to constrain movement of the suspension away from the disk such that an air bearing between the slider and disk is not disrupted." Independent

Art Unit: 2652

claims 9 and 17 include minor variations of this functional limitation. For instance, independent claim 9 states that the air bearing is "not substantially disrupted."

Looking to appellant's disclosure for an understanding of this functional limitation, it is seen that the "distance" is the "Clearance 'C' 36" that is established between motion limiting element "indent 32" and "suspension 26" or alternatively between motion limiting element "rib 34" and "suspension 26." Because this distance is less than the distance would be without the presence of the motion limiting element, the movement of the suspension away from "disk 20" would be "constrained".

Now to understand the crust of the functional limitation, i.e., "such that an air bearing between the slider and disk is not disrupted" substantially or otherwise. Appellant would like us to believe that this limitation should be interpreted as the motion limiting element prevents the slider from contacting the disk. This, however, is not necessarily the case. Air bearing disruption is in fact explained in appellant's disclosure to be when the slider is "lifted off the disk." See lines 7-8 on page 2, for instance. Also note that appellant's disclosure further explains that "The distance 'C' preferably is sufficiently small that in the event of a shock, the suspension 26 remains close enough to the associated disk 20 to avoid disrupting the air bearing between the slider 28 and disk 20" in lines 19-21 on page 5, for instance. This implies that the air bearing between the slider and disk will be disrupted due to a large separation of the slider from the disk. Lastly, it is seen that if a shock to appellant's disk drive were large enough, the motion limiting element could not by itself prevent the slider from contacting the disk as the motion limiting element does not constrain movement of the slider toward the disk, but

Art Unit: 2652

merely constrains movement of the slider away from the disk. The appellant has not provided any evidence supporting the notion that the motion limiting element prevents all contact between the slider and the disk.

Now turning to the reference, Onda teaches a distance between a motion limiting element (includes 33 or includes 38, for instance) is established (as shown in FIG. 3, for instance) to constrain movement of a suspension (21a or 21d) away from a disk (13) such that an air bearing between a slider (22a or 22d) and the disk is not disrupted (as shown in FIG. 3, for instance, i.e., by preventing the slider from moving too far away from the disk to avoid disrupting the air bearing therebetween) substantially or otherwise.

Rejection under 35 USC 102(b) using Kuroda (JP 03-168985)

With regard to this rejection, it is noted that appellant does not refute that the hard disc drive of Kuroda includes all of the claimed structural elements. Appellant's sole argument lies in the last functional limitation in each of the independent claims. As an initial matter, it is noted that "where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristics relied on," *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (CCPA 1971) and also that the burden of proof can be shifted to the applicant to show that the subject matter of the prior art does not possess

Art Unit: 2652

the characteristic relied on whether the rejection is based on inherency under 35 U.S.C. 102 or obviousness under 35 U.S.C. 103, *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

Kuroda teaches a distance between a motion limiting element (includes 13, for instance) is established (as shown in FIG. 1, for instance) to constrain movement of a suspension (2) away from a disk (5) such that an air bearing between a slider (4) and the disk is not disrupted (as shown in FIG. 1, for instance, i.e., at least by preventing the slider from moving too far away from the disk to avoid disrupting the air bearing therebetween) substantially or otherwise.

#### Rejection under 35 USC 112

The appellant argues that the removal of the term "substantially" is not misdescriptive of the disclosure and points to support in lines 19-21 on page 5. Namely, "The distance 'C' preferably is sufficiently small that in the event of a shock, the suspension 26 remains close enough to the associated disk 20 to avoid disrupting the air bearing between the slider 28 and disk 20." This recitation, however, does not preclude any disruption of the ABS. It merely points to appellant's desire to "avoid disrupting the air bearing between the slider 28 and disk 20" It is seen that if a shock to appellant's disk drive were large enough, the motion limiting element could not by itself prevent all ABS disruption as the motion limiting element does not constrain movement of the slider toward the disk, but merely constrains movement of the slider away from

Art Unit: 2652

the disk. Furthermore, the appellant has not provided any evidence supporting the notion that the motion limiting element prevents all ABS disruption.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

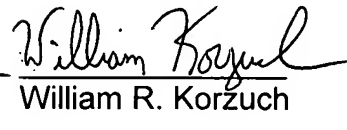
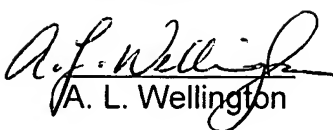
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Craig A. Renner  
Primary Examiner  
Art Unit 2652

Conferees:



A. L. Wellington      William R. Korzuch